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**Declaration under Rule 4.17:**

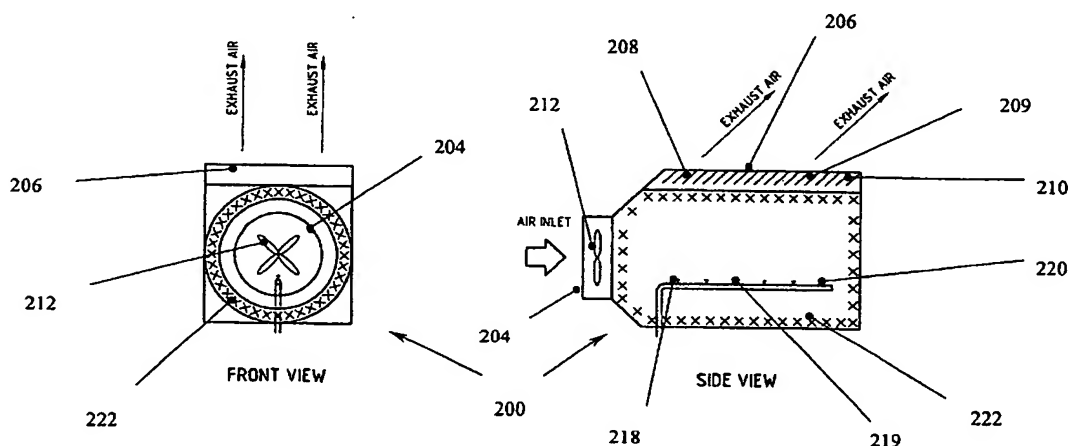
— as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii)) for all designations

**Published:**

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: DUST SCRUBBER



(57) Abstract: A wet and a wet dry dust removal apparatus, the latter for drilling applications including a housing, adapted to contain powered air induction means to induct air contaminated with particulate matter, water spraying means adapted to spray a mist of water into the induced air stream to capture the particulate matter, water removal means adapted to remove water droplets containing the particulate matter, the water removal means positioned in the housing at an oblique or parallel angle to the direction of the air flow thereby increasing the surface area for removing the water droplets, wherein the paralleled or angled position and increased surface area reduces the air pressure and velocity required to remove dust for a given volume of air, so that the energy consumption of the air induction means is reduced.

# INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/AU03/00624**

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: E21F 5/02, E21C 35/22, B01D 47/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC : E21F 5/02, E21C 35/22, B01D 47/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT : angle, parallel, vacuum, collect+, remov+, extract+, spray+

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6312504 B1 (BOTH et al) 6 November 2001 See whole document	1-20
X	US 5300131 A (RICHARD) 5 April 1994 See whole document	1-20
X	US 5253925 A (MODZIK, Jr.) 19 October 1993 See whole document	1-20

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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**INTERNATIONAL SEARCH REPORT**

International application No.

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<b>C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
<b>Category*</b>	<b>Citation of document, with indication, where appropriate, of the relevant passages</b>	<b>Relevant to claim No.</b>
X	US 4380353 A (CAMPBELL et al) 19 April 1983 Column 2 lines 16-55 and column 7 line 50 - column 8 line 9	1-20
X	US 4140501 A (EKMAN) 20 February 1979 Column 3 lines 19-53	1-20
A	US 5145236 A (LIAO et al) 8 September 1992	

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU03/00624**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	6312504	AU	53493/99	CN	1314198	DE	19853190
		GB	2343850	PL	336130	ZA	9906660
US	5300131	NONE					
US	5253925	AU	31197/93	GB	2263294	ZA	9300239
US	4380353	AU	55964/80	CA	1143649	DE	3009323
		GB	2046624				
US	4140501	NONE					
US	5145236	AU	25623/92	WO	9405899		
END OF ANNEX							